

List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-10 (Cancelled)

11. (New) A radiometric measuring device for mounting at a container fillable with a filling substance, comprising:

a radioactive source, which, in operation, sends radioactive radiation through the container;

at least two detectors, which serve for registering radiation passing through the container and for producing an electrical pulse rate corresponding to the registered radiation;

offset generators, which superimpose on the pulse rate of each detector an offset representing a status of such detector;

a collector line, to which each detector feeds an output signal corresponding to the superimposing of its pulse rate and its offset; and

a superordinated unit, which is fed by said collector line, a sum signal corresponding to the superimposing of the output signals, with said superordinated unit deriving, on the basis of the sum signal, a measurement signal and/or a status of the measuring device.

12. (New) A radiometric measuring device for mounting at a container fillable with a filling substance, comprising:

a radioactive source, which, in operation, sends radioactive radiation through the container;

at least two detectors, which serve for registering radiation passing through the container and for producing an electrical pulse rate corresponding to the registered radiation;

offset generators, which superimpose on the pulse rate of each detector a detector-specific offset;

turn-off switches, which serve for suppressing transmission of pulse rate and offset, when a detector malfunctions;

a collector line, to which each properly working detector feeds an output signal corresponding to the superimposing of its pulse rate and its offset; and

a superordinated unit, which is fed by said collector line a sum signal corresponding to the superimposing of the output signals, with said superordinated unit deriving, on the basis of the sum signal, a measurement signal and/or a status of the measuring device.

13. (New) The radiometric measuring device as claimed in claim 11, wherein:
a series of detectors is provided; and
said collector line begins at a first detector of the series, leads from there from one detector to the detector neighboring such, and from the last detector to said superordinated unit.

14. (New) The radiometric measuring device as claimed in claim 11, wherein:
each detector comprises a scintillator and a photomultiplier appended thereto.

15. (New) The radiometric measuring device as claimed in claim 14, wherein:
said offset-generators send periodic reference light flashes through said scintillator via a light conductor.

16. (New) The radiometric measuring device as claimed in claim 13, wherein:
said superordinated unit is integrated in the last detector of the series.

17. (New) The method for measuring a physical variable with a radiometric measuring device, comprising the steps of:

assigning a desired value for an offset to each detector, the offset generators of the detectors generating the desired value, when the detector is working properly, and the desired value is greater than the sum of the maximum expected pulse rates for the detectors;

determining a total count rate on the basis of the sum signal using the superordinated unit forming the difference between the total count rate and a count rate corresponding to the sum of the desired values of the offsets;

recognizing that an error is present, when the difference is negative; and
deriving a measurement signal in the case of positive difference.

18. (New) The method for measuring a physical variable as claimed in claim 17, wherein:

in the case of a negative difference, it is determined on the basis of a mathematical method (e.g. difference), which of the detectors is malfunctioning.

19. (New) A radiometric measuring device for mounting at a container fillable with a filling substance, comprising:

a radioactive source, which, during operation, sends radioactive radiation through the container;

first and second detectors, which serve for registering radiation passing through the container and for producing an electric pulse rate corresponding to the registered radiation;

an offset-generator, which superimposes on the pulse rate of the first detector an offset reflecting a status of the first detector; and,

a superordinated unit integrated in the second detector, with which the first detector is connected via a connecting line, via which the first detector feeds an output signal corresponding to the superpositioning of the pulse rate and the offset, to which the pulse rate and a status of the second detector are fed, and which, on the basis of

the incoming signals, derives a measurement signal and/or a status of the measuring device.

20. (New) A radiometric measuring device for mounting at a container fillable with a filling substance, comprising:

a radioactive source, which, during operation, sends radioactive radiation through the container,

first and second detectors, which serve for registering radiation passing through the container and for producing an electric pulse rate corresponding to the registered radiation and for transmitting an output signal corresponding to the pulse rate to a superordinated unit, wherein:

said radioactive source has a strength, in the case of which, for each detector, always a minimum pulse rate greater than zero is to be expected, wherein:

in each detector, a turn-off switch is provided, which suppresses transmission of the output signal to said superordinated unit, when the detector is malfunctioning; and

said superordinated unit derives a measurement signal and/or a status of the measuring device on the basis of the output signals.